Leading with Algebra

Welcome to Issue 3 of the Algebra Newsletter!

In this issue, we focus on Problems of the Month. Problems of the Month are non-routine math problems that are designed promote problem solving and perseverance. They are divided into five levels of difficulty which allow all students to be challenged. You can find a library of Problems of the Month at http://www.insidemathematics.org/ problems-of-the-month.

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Updates from PARCC: PARCC has published performance level descriptors for each grade level in Mathematics at <u>http://www.parcconline.org/math-plds</u>. These document details understanding and skills that students with varying levels of command have for each cluster of standards. As instructors, the descriptors for the highest level can be particularly helpful in designing curricula. **Updates From CPS:** Seven additional high schools have become authorized to offer International Baccalaureate diplomas, increasing the number of high schools with IB programs to 22. CPS graduates who have completed an IB Diploma Programme are more likely to enroll and persist in college. CPS has the largest network of IB schools in the United States.

Updates from the Department of Math:

A second full-length Practice Exit Exam is now available on the Algebra I page of the Knowledge Center! Please use the Practice Exit Exams where instructionally appropriate for your students.

The SY15-16 course approval for HS Algebra I in the Middle Grades is also available for your review on the Algebra I page of the Knowledge Center. All documents are due by Wednesday, May 20th.

Finally, be on the lookout for updates regarding the adoption of instructional materials. During the week of April 20th, over 100 district representatives (including 60+ teachers) reviewed 41 sets of math materials for grades K-High School. Their review will lead to a recommended list of materials for schools to choose from.



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Math Challenge of the Month (for you, your students, or both)

A student wishing to give 25 cents to each of several charities finds that he is 10 cents short. If instead, he gives 20 cents to each of the charities, then he is left with 25 cents. Find the amount of money with which the student starts.

(Source: A. Posamentier, C. Salkin, Challenging Problems in Algebra]

For additional info about Leading With Algebra, visit the site.

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Teacher Spotlight: Alison Ridgway, 6th and 7th Grade Math Teacher, Skinner North Classical School

A conversation about using Problem of the Month (POM) <u>Double</u> <u>Down</u>, which addresses Operations and Algebraic Thinking.

Q: What are some of the benefits to student of using a POM?

There are many benefits. Students are really motivated by the problems, especially to go through the levels. They get excited. The questions are different from the regular, routine types of problems. They really enjoy working collaboratively, and they even enjoy making posters of their work and commenting on each other's posters.



Q: What mathematics were the students learning in this POM and how did it fit in your instructional unit?

My 7th grade class was studying exponential functions (the "Growing, Growing, Growing" unit in Connected Mathematics Program). They had just started to be able to write equations for exponential functions, and this POM gave them some real life situations which involved exponential growth and decay. They really got into the problem about a photo going viral on Facebook.

Q: How did you assess your students' work on the POM?

I used a couple of ways. I gave them a participation grade based on the work with their group. I also graded their poster based on a rubric, primarily based on the clarity of their reasoning. Finally I gave them a participation point for responding to a fellow student's poster. I advise against giving extra credit grades for a problem of the month; incorporating them into your instruction works better.

Q: What advice do you have for teachers who are interested in using a Problem of the Month for the first time?

Pick one that interests you and try it for fun! You'll be impressed at how much your students enjoy it and the sophisticated strategies they will use.

Relevant reading

The Noyce Foundation just published a free short e-book <u>Jumpstarting a Schoolwide Culture of Math-</u> <u>ematical Thinking: Problems of the Month</u> by Desiree Pointer Mace, David Foster, and Audrey Poppers. The book comes in two forms: as an i-Book with videos and as a pdf without videos. The book discusses ways to engage students in Problems of the Month and foster mathematical discrouse in the classroom and gives suggestions for assessment.

Did you know? The word "algebra" is Arabic in origin, deriving from the word "al-jabr." The word means "restoration," and in the mathematical sense, the word refers to the process of transposing a quantity to the other side of an equation.

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